

We claim:

1. A flame simulating assembly for providing at least one image of flames, the flame simulating assembly having:
 - at least one light source for producing said at least one image of flames;
 - a screen having a front surface and positioned in a path of light from said at least one light source, the screen being adapted to transmit said at least one image of flames through the front surface;
 - at least one simulated interior fireplace wall positioned behind the screen; and
 - the front surface of the screen including at least one observation region, said at least one observation region being adapted to permit observation of at least part of said at least one simulated interior fireplace wall.
2. A flame simulating assembly according to claim 1 in which the front surface of the screen includes a viewing region, said at least one image of flames being transmittable through the viewing region.
3. A flame simulating assembly according to claim 2 additionally including a simulated fuel bed positioned adjacent to the viewing region of the front surface, such that said at least one image of flames is transmitted through the front surface proximal to the simulated fuel bed.
4. A flame simulating assembly according to claim 3 in which the viewing region is partially reflective.
5. A flame simulating assembly according to claim 4 in which the front surface of the screen additionally includes:

a transition region disposed between the viewing region and the observation region;
said at least one image of flames being at least partly transmittable through the transition region; and
said at least one simulated interior fireplace wall being at least partially observable through the transition region.

6. A flame simulating assembly for providing at least one image of flames, the flame simulating assembly having:

a simulated fuel bed;
at least one light source for producing said at least one image of flames;
a screen positioned behind the simulated fuel bed, the screen having a front surface adjacent to the simulated fuel bed;
the screen being positioned in a path of light from said at least one light source and adapted to transmit said at least one image of flames through the screen;
at least one simulated interior fireplace wall positioned behind the screen;

the front surface of the screen including:

a viewing region disposed proximate to the simulated fuel bed, said at least one image of flames being transmittable through the viewing region; and
an observation region disposed distal to the simulated fuel bed, the observation region being adapted to permit observation of at least part of said at least one simulated interior fireplace wall through the observation region.

7. A flame simulating assembly according to claim 6 additionally including a transition region disposed between the observation region and the viewing region, said at least one simulated interior fireplace wall being at least

partially observable through the transition region, and said at least one image of flames being at least partially transmittable through the transition region.

8. A flame simulating assembly according to claim 6 in which the screen additionally includes a back surface located behind the front surface, the back surface being adapted to diffuse light transmitted therethrough.
9. A flame simulating assembly according to claim 6 in which said at least one simulated interior fireplace wall has a pattern simulating firebrick thereon.
10. A flame simulating assembly according to claim 9 additionally including a housing, said at least one simulated interior fireplace wall being mounted on a back wall of the housing.
11. A flame simulating assembly according to claim 10 in which the housing includes at least two simulated interior fireplace side walls, each of said at least two simulated interior fireplace side walls extending forwardly from said back wall.
12. A flame simulating assembly according to claim 11 in which said at least two simulated interior fireplace side walls extend forwardly from said back wall beyond the front surface of the screen.
13. A flame simulating assembly according to claim 12 in which said at least two simulated interior fireplace side walls include patterns simulating firebrick thereon, said patterns being configured to mate with the firebrick pattern on said at least one simulated interior fireplace wall.

14. A flame simulating assembly according to claim 6 including a flame effect element for configuring light from said at least one light source to form said at least one image of flames, the flame effect element being positioned in the path of light between said at least one light source and the screen.
15. A flame simulating assembly according to claim 6 including a flicker element for causing light from said at least one light source to fluctuate to form said at least one image of flames, the flicker element being positioned in the path of light between said at least one light source and the screen.
16. A flame simulating assembly for providing at least one image of flames, the flame simulating assembly having:
 - a simulated fuel bed;
 - a screen positioned behind the simulated fuel bed, the screen having a front surface adjacent to the simulated fuel bed and being adapted for transmission of said at least one image of flames therethrough;
 - at least one simulated interior fireplace wall positioned behind the screen;
 - at least one light source for producing said at least one image of flames;
 - a flicker element positioned in a path of light between said at least one light source and the screen for causing light from said at least one light source to fluctuate;
 - the screen being positioned in a path of fluctuating light from said at least one light source, such that said at least one image of flames is transmittable therethrough;
 - the front surface including:

a viewing region disposed proximate to the simulated fuel bed, said at least one image of flames being transmittable through the viewing region; and
an observation region disposed distal to the simulated fuel bed, the observation region being adapted to permit observation of at least part of said at least one simulated interior fireplace wall through the observation region.

17. A flame simulating assembly according to claim 16 additionally including a transition region disposed between the observation region and the viewing region, said at least one simulated interior fireplace wall being at least partially observable through the transition region, and said at least one image of flames being at least partially transmittable through the transition region.
18. A flame simulating assembly according to claim 16 in which said at least one interior fireplace wall has a firebrick pattern thereon.
19. A flame simulating assembly according to claim 16 in which the viewing region of the front surface of the screen at least partially reflects an image of the simulated fuel bed.
20. A flame simulating assembly according to claim 16 additionally including a flame effect element positioned in the path of fluctuating light between the flicker element and the screen, for configuring light from the light source to form the image of flames.
21. A flame simulating assembly including:
 - a housing with a back wall, a top wall attached to the back wall, a bottom wall positioned opposite the top wall, and at least two side

walls extending between the top and bottom walls, defining a cavity opening to a front end of the housing;

at least one interior element positioned proximal to the back wall;

a simulated fuel bed disposed in the cavity proximal to the front end of the housing;

at least one light source for producing at least one image of flames;

a screen positioned between the simulated fuel bed and said at least one interior element, the screen having a front surface positioned adjacent to the simulated fuel bed;

the screen being positioned in a path of light from said at least one light source, such that said at least one image of flames is transmitted through the screen;

the front surface of the screen including:

- a viewing region disposed proximate to the simulated fuel bed, for transmitting said at least one image of flames therethrough;
- an observation region disposed distal to the simulated fuel bed, the observation region being adapted to permit observation of at least part of said at least one interior element through the observation region; and
- a transition region disposed between the viewing region and the observation region, said at least one interior element being at least partially observable through the transition region, and said at least one image of flames being partially transmittable through the transition region.

22. A flame simulating assembly according to claim 21 in which said at least one interior element is a simulated interior fireplace wall.
23. A flame simulating assembly according to claim 22 in which the simulated interior fireplace wall includes a firebrick pattern thereon.

24. A flame simulating assembly according to claim 23 in which the housing includes at least two simulated interior side walls, each of said at least two simulated interior side walls extending forwardly from the simulated interior fireplace wall.
25. A flame simulating assembly according to claim 24 in which said at least two simulated interior side walls include patterns simulating firebrick thereon, said patterns being configured to align with the firebrick pattern on the simulated interior fireplace wall.
26. A flame simulating assembly according to claim 21 including a flame effect element for configuring light from said at least one light source to form said at least one image of flames, the flame effect element being positioned in the path of light between said at least one light source and the screen.
27. A flame simulating assembly according to claim 21 including a flicker element for causing light from said at least one light source to fluctuate, the flicker element being positioned in the path of light between said at least one light source and the screen.
28. A flame simulating assembly including a shield for obstructing light from said at least one light source, the shield being positioned behind the screen and substantially below the observation region.
29. A flame simulating assembly including:
 - a housing with a back wall, a top wall attached to the back wall, a bottom wall positioned opposite the top wall, and at least two side walls extending between the top and bottom walls, defining a cavity opening to a front end of the housing;

at least one interior element positioned proximal to the back wall;
a simulated fuel bed disposed in the cavity proximal to the front end of the housing;
at least one light source for producing at least one image of flames;
a screen positioned between the simulated fuel bed and said at least one interior element, the screen having front surface positioned adjacent to the simulated fuel bed;
the screen being positioned in a path of light from said at least one light source, such that said at least one image of flames is transmitted through the screen;
the front surface of the screen having a viewing region disposed proximate to the simulated fuel bed, for transmitting said at least one image of flames therethrough;
the screen including a top edge defining an upper side of the screen, the top edge of the screen being spaced apart from the top wall a predetermined distance, to define an upper opening; and
the upper opening permitting observation of at least part of said at least one interior element.

30. A flame simulating assembly according to claim 29 in which said at least one interior element includes a pattern thereon.
31. A flame simulating assembly according to claim 30 in which the housing includes at least two simulated interior side walls, each of said at least two simulated interior side walls extending forwardly from said at least one interior element.
32. A flame simulating assembly according to claim 31 in which said at least two simulated interior side walls include patterns thereon, said patterns being formed to match with the pattern on said at least one interior element.

33. A flame simulating assembly according to claim 29 additionally including a flame effect element for configuring light from said at least one light source to provide the image of flames, the flame effect being positioned in the path of light between said at least one light source and the screen.
34. A flame simulating assembly according to claim 29 additionally including a flicker element positioned in the path of light between said at least one light source and the screen for causing light from said at least one light source to fluctuate.
35. A flame simulating assembly according to claim 29 in which the viewing region is at least partially reflective.
36. A flame simulating assembly according to claim 29 in which the front surface includes a transition region extending from the viewing region to the top edge, said at least one interior element being at least partially observable through the transition region, and said at least one image of flames being partially transmittable through the transition region.
37. A flame simulating assembly for providing at least one image of flames, the flame simulating assembly having:
 - a simulated fuel bed;
 - a screen positioned behind the simulated fuel bed, the screen having a front surface adjacent to the simulated fuel bed;
 - at least one light source for producing said at least one image of flames;
 - a flicker element positioned under the simulated fuel bed, the flicker element being positioned in a path of light between said at least one light source and the screen, for causing light from said at least one light source to fluctuate;

at least one simulated interior fireplace wall positioned behind the screen;

the front surface of the screen including:

a viewing region disposed proximate to the simulated fuel bed, the viewing region being adapted for transmission of said at least one image of flames therethrough;

an observation region disposed distal to the simulated fuel bed, the observation region being adapted to permit observation of at least part of said at least one simulated interior fireplace wall therethrough.

38. A flame simulating assembly according to claim 37 in which the front surface of the screen additionally includes:

a transition region disposed between the viewing region and the observation region;

said at least one image of flames being transmittable through the transition region; and

said at least one simulated interior fireplace wall being at least partially observable through the observation region.

39. A flame simulating assembly according to claim 37 additionally including a flame effect element for configuring light from said at least one light source to produce said at least one image of flames, the flame effect element being positioned in the path of light between the flicker element and the screen.

40. A flame simulating assembly for providing at least one image of flames, the flame simulating assembly having:

a simulated fuel bed;

at least one light source for producing said at least one image of flames;

a screen positioned behind the simulated fuel bed, the screen having a front surface adjacent to the simulated fuel bed;
the screen being positioned in a path of light from said at least one light source, and adapted to transmit said at least one image of flames through the screen;
at least one simulated interior fireplace wall positioned behind the screen;

the front surface of the screen including:

- a viewing region disposed proximate to the simulated fuel bed, said at least one image of flames being transmittable through the viewing region;

- an observation region disposed distal to the simulated fuel bed, the observation region being adapted to permit observation of at least part of said at least one simulated interior fireplace wall through the observation region; and

- a transition region disposed between the viewing region and the observation region, said at least one simulated interior fireplace wall being at least partially observable through the transition region, and said at least one image of flames being partially transmittable through the transition region;

the viewing region, the transition region and the observation region being produced by the steps of:

- providing a source of vaporized metal adapted for spraying vaporized metal onto the front surface;

- providing a mask element configured to substantially block vaporized metal sprayed from the source from condensing upon the observation region of the front surface;

- positioning the mask element in a predetermined mask position relative to the source and the front surface of the screen;

positioning the source in a predetermined source position relative to the mask element and the front surface, such that vaporized metal is sprayable from the source onto the viewing region and the transition region of the front surface; spraying vaporized metal from the source onto the front surface; and permitting the metal sprayed onto the front surface to condense thereon.

41. A screen for use in a flame simulating assembly for providing an image of flames, the flame simulating assembly including a simulated fuel bed, at least one light source for producing the image of flames, and at least one simulated interior fireplace wall positioned behind the screen, the screen being positionable in a path of light from said at least one light source such that the image of flames is transmittable through the screen, the screen having:

a front surface positionable adjacent to the simulated fuel bed, when the screen is located behind the simulated fuel bed in the flame simulating assembly;

the front surface of the screen including:

a viewing region positionable proximate to the simulated fuel bed upon locating the screen is located behind the simulated fuel bed, the image of flames being transmittable through the viewing region;

an observation region positionable distal to the simulated fuel bed, the observation region being adapted to permit observation of at least part of said at least one simulated interior fireplace wall through the observation region;

a transition region disposed between the viewing region and the observation region, said at least one simulated interior fireplace wall being at least partially observable through the

transition region, and the image of flames being partially transmittable through the transition region;
the viewing region and the transition region of the front surface of the screen being produced by the steps of:

- providing a source of vaporized metal adapted for spraying vaporized metal onto the front surface;
- providing a mask element configured to substantially block vaporized metal sprayed from the source from condensing upon the observation region of the front surface;
- positioning the mask element in a predetermined mask position relative to the source and the front surface of the screen;
- positioning the source in a predetermined source position relative to the mask element and the front surface, such that vaporized metal is sprayable from the source onto the viewing region and the transition region of the front surface;
- spraying vaporized metal from the source onto the front surface; and
- permitting the metal sprayed onto the front surface to condense thereon in the viewing and transition regions.